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 2. **Accession number:** 9958588**Title:** **Nanorobot architecture for medical target identification****Authors:** [Cavalcanti, A.](#)<sup>1</sup>; [Shirinzadeh, B.](#); [Freitas, R.A., Jnr.](#); [Hogg, T.](#)**Author affiliation:** 1 CAN Center for Autom. in Nanobiotech., Melbourne, VIC, Australia**Source title:** Nanotechnology**Abbreviated source title:** Nanotechnol. (UK)**Volume:** 19**Issue:** 1**Publication date:** 9 Jan. 2008**Pages:** 015103-1-15**Language:** English**ISSN:** [0957-4484](#)**CODEN:** [NNOTER](#)**Document type:** Journal article (JA)**Publisher:** IOP Publishing Ltd.**Country of publication:** UK**Material Identity Number:** [ET07-2008-012](#)

**Abstract:** This work has an innovative approach for the development of **nanorobots** with sensors for medicine. The **nanorobots** operate in a virtual environment comparing random, thermal and chemical control techniques. The **nanorobot** architecture model has nanobioelectronics as the basis for manufacturing integrated system devices with embedded nanobiosensors and actuators, which facilitates its application for medical target identification and drug delivery. The **nanorobot** interaction with the described workspace shows how time actuation is improved based on sensor capabilities. Therefore, our work addresses the control and the architecture design for developing practical molecular machines. Advances in nanotechnology are enabling manufacturing nanosensors and actuators through nanobioelectronics and biologically inspired devices. Analysis of integrated system modeling is one important aspect for supporting nanotechnology in the fast development towards one of the most challenging new fields of science: molecular machines. The use of 3D simulation can provide interactive tools for addressing **nanorobot** choices on sensing, **hardware** architecture design, manufacturing approaches, and control methodology investigation.

**Number of references:** 129**Inspec controlled terms:** [biomedical electronics](#) - [biomolecular electronics](#) - [DNA](#) - [drug delivery systems](#) - [medical robotics](#) - [microsensors](#) - [molecular biophysics](#) - [nanobiotechnology](#) - [nanoelectronics](#)**Uncontrolled terms:** [nanorobot](#) - [medical target identification](#) - [medicine](#) - [virtual environment](#) - [nanobioelectronics](#) - [integrated system devices](#) - [nanobiosensors](#) - [actuators](#) - [nanosensors](#) - [drug delivery](#) - [nanorobot interaction](#) - [nanotechnology](#) - [biologically inspired devices](#) - [DNA molecular machine](#)**Inspec classification codes:** [A8783](#) Nanotechnology applications in biomedicine - [A8770G](#) Patient care and treatment - [A8715](#)Molecular biophysics - [B2230B](#) Biomolecular electronics - [B7520](#) Patient care and treatment - [B7230M](#) Microsensors - [C3385](#) Biological and medical control systems - [C3390C](#) Mobile robots - [C3240P](#) Microsensors**Treatment:** Practical (PRA)**Discipline:** Physics (A); Electrical/Electronic engineering (B); Computers/Control engineering (C)**DOI:** 10.1088/0957-4484/19/01/015103**Database:** Inspec

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